

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A vapor deposition effusion system, comprising:

a device configured to translate a strip material through a deposition zone and along a processing path, each of the strip material and the deposition zone having a width oriented perpendicular to the processing path and a length oriented parallel to the processing path;

a first and second substantially closed vessels located serially along the processing path, each vessel-adapted to contain a heated quantity of a different source material, ~~the~~ each vessel including an array of vapor delivery nozzles distributed uniformly across the vessel in a direction corresponding to the width of the deposition zone and configured to expel overlapping plumes of source material, so that a fog of source material ~~of substantially uniform flux~~ is created and deposited on the strip material in the deposition zone, the fog having a substantially uniform composition across the width of the deposition zone and a varying composition across the length of the deposition zone; and

a heating system adapted to maintain the nozzle at a temperature higher than the source material.

2. (previously amended) The system of claim 1 further comprising a thermal control shield disposed around at least partially around the vessel.

3. (previously amended) The system of claim 2, wherein the thermal control shield includes an outer shell and plural insulation layers.

4. (previously amended) The system of claim 3, wherein the outer shell is formed of one or more materials chosen from the following group: graphite, boron nitride, tantalum, molybdenum, tungsten, rhenium and titanium.

5. (previously amended) The system of claim 4, wherein the outer shell is ceramic coated.

6. (previously amended) The system of claim 1, wherein the vessel includes plural spaced-apart vapor delivery nozzles.

7. (previously amended) The system of claim 6, wherein the nozzles are disposed along an elongate axis configured to expel overlapping plumes of source material, whereby a fog of source material of substantially uniform flux along the elongate axis is created.

8. (previously amended) The system of claim 6, wherein the vessel is constructed of materials chosen from the group consisting of graphite, pyrolytic boron nitride coated graphite, tantalum, molybdenum, tungsten and ceramics.

9. (previously amended) The system of claim 1, wherein the vessel includes a crucible and a lid, wherein the at least one vapor delivery nozzle is positioned in the lid.

10. (previously amended) The system of claim 9, wherein the at least one nozzle is integrally formed into the lid.

11. (previously amended) The system of claim 9, wherein there are plural nozzles positioned on the lid.

12. (previously amended) The system of claim 11, wherein the nozzles are spaced apart between 1 and 20 centimeters.

13. (previously amended) The system of claim 9, wherein the heating system includes an electrical heating element disposed in the lid.

14. (previously amended) The system of claim 13, wherein the heating element disposed in the lid is generally U-shaped.

15. (previously amended) The system of claim 9, wherein the heating system is adapted to maintain the lid at a temperature higher than the source material.

16. (previously amended) The system of claim 1, wherein the at least one nozzle has a discharge opening between 0.25 and 2.5 centimeters in diameter.

17. (previously amended) The system of claim 1, wherein the heating system includes at least one U-shaped heating element.

18. (previously amended) A vapor deposition system, comprising:

a roll assembly configured to translate a strip material through a deposition zone and along a processing path, each of the strip material and the deposition zone having a width oriented perpendicular to the processing path;

a crucible and a lid configured to hold a quantity of molten constituent material;

at least one nozzle positioned in the lid to pass vapor evaporated from the molten constituent material out of the crucible; and

a source material heating system to control the temperature of the source material at a desired temperature range;

wherein the roll assembly is configured to maintain a substantially constant travel speed of the strip material through the deposition zone in relation to the temperature of source material in the crucible, such that source material of substantially uniform flux is created and deposited on the strip material.

19. (previously amended) The system of claim 18 further comprising a nozzle heating system adapted to maintain the nozzle at a temperature above the temperature of the constituent material.

20. (previously amended) The system of claim 19, wherein the nozzle heating system is configured to maintain the lid at a temperature above the temperature of the constituent material.

21. (previously amended) The system of claim 18, wherein in the nozzle is sized to constitute the rate limiting factor in effusion of the vapor.

22. (previously amended) The system of claim 18, wherein the nozzle has an opening area between 0.05 and 5 square centimeters.

23. (previously amended) The system of claim 18 further comprising a thermal control shield at least partially surrounding the crucible.

24. (previously amended) The system of claim 18, wherein the thermal control shield includes an outer shell and thermal insulation.

25. (previously amended) The system of claim 18, wherein the crucible is constructed from materials chosen from the following group: graphite, pyrolytic boron nitride coated graphite, tantalum, molybdenum, tungsten and ceramics.

26. (previously amended) A vapor deposition system, comprising:

a device configured to translate a strip material through a deposition zone and along a processing path, each of the strip material and the deposition zone having a width oriented perpendicular to the processing path;

a substantially closed vessel adapted to contain a heated quantity of source material, the vessel including an effusion side with at least one vapor delivery nozzle adapted to expel a plume of source material; and

a thermal control shield substantially covering the effusion side of the vessel, except for an area adjacent the at least one nozzle, the shield being configured to protect the strip material from excessive thermal radiation, to optimize reaction of the source material deposited on the strip material, and to avoid undesired condensation on the strip material.

27. (previously amended) The system of claim 26, wherein the thermal control shield substantially encloses the vessel.

28. (previously amended) The system of claim 26, wherein the thermal control shield includes an outer shell and a thermal insulation layer.

29. (previously amended) The system of claim 26 further comprising a heating system adapted to maintain the at least one nozzle at a temperature higher than the temperature of the constituent material.

30. (previously added) The system of claim 1, wherein the strip material is flexible.

31. (previously added) A vapor deposition effusion system, comprising:

a device adapted to translate a strip material through a deposition zone and along a processing path, each of the strip material and the deposition zone having a width oriented perpendicular to the processing path;

a substantially closed vessel adapted to contain a heated quantity of source material, the vessel including an array of vapor delivery nozzles, each nozzle having an orifice length and an orifice diameter selected in relation to the spacing between nozzles to provide uniform deposition of source material across the width of the deposition zone; and

a heating system adapted to maintain the nozzle at a temperature higher than the source material.

32. (previously added) The system of claim 31, wherein within at least one of the nozzles has an orifice length that is approximately equal to its orifice diameter.

33. (previously added) The system of claim 31, wherein the nozzles lie in a common vertical plane along the width of the deposition zone.

34. (previously added) The system of claim 33 further comprising a central nozzle substantially centered relative to the width of the deposition zone and at least one end nozzle on each side of the central nozzle.

35. (previously added) The system of claim 31, wherein the orifice diameter of each nozzle is within the range of about 0.25-cm. to about 2.5-cm., and the orifice length of each nozzle is within the range of about 0.25-cm. to about 2.5-cm.